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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,573	06/24/2003	Yu-Chong Tai	049411-0248	3326

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FOLEY AND LARDNER LLP  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
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RAMILLANO, LORE JANET

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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12/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/603,573	<b>Applicant(s)</b> TAI ET AL.	
	<b>Examiner</b> LORE RAMILLANO	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,8-13,17-19,22-26 and 30-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6,8-13,17-19,22-26 and 30-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/24/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on 10/2/08 has been entered.

### ***Status of Claims***

2. In applicant's reply filed on 10/2/08, applicant amended claim. Claims 1-4, 6, 8-13, 17-19, 22-26, and 30-33 are pending and under examination.

### ***Response to Amendment***

#### ***Claim Objections***

3. The objection to claims 1-4, 6, 8-13, 17-19, 22-26, and 30-33 is withdrawn.

#### ***Prior art rejections***

4. The rejections over the prior art are maintained.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the

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international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 1-4, 6, 8-13, 17-19, 22-23, 25-26, and 30-33** are rejected under 35 U.S.C. 102(e) as being anticipated by Lazar et al. ("Lazar," US Pub. No. 2004/0208751).

Lazar discloses the structural limitations of applicant's invention. In particular, Lazar discloses a microfluidic system comprising a substrate (i.e. microchip platform, [0026]), an electrochemical pump system on the substrate, the electrochemical pump system comprising a plurality of electrolysis pumps, in which one is a sample injector, configured in parallel and/or sequential (i.e. [0026]) and having at least one outlet; each of the electrolysis pumps comprising: a chamber (i.e. [0038]); a plurality of electrodes, which are coupled to an electrical source (i.e. 30, voltage power source, [0027]); a fluid inside the chamber, and the fluid in contact with the electrodes, wherein the fluid is adapted to generate a gaseous species to increase a pressure within the chamber when the electrodes are biased using the electrical source (i.e. [0028], [0068]); an inlet and an outlet (i.e. 14, 16, [0027]); a separation column on the substrate having an inlet, an outlet, a microchannel, a solid stationary phase material packed inside the microchannel, the inlet of the separation column being coupled to at least one outlet of the electrochemical pump; and wherein the electrochemical pump system and the separation column are configured such that the electrochemical pump system provides an elution for a separation process (i.e. [0029], [0031], [0061]).

Lazar further discloses: a gradient elution (i.e. [0047]), a sample source (i.e. [0029]), mixers (i.e. [0026]), a nozzle (i.e. 32, [0029]) that is coupled to an electrospray ionization-mass spectrometry (ESI-MS) (i.e. [0026]), a detection device (i.e. optical detectors, [0026]), and a pump system and separation column constructed from injection molding, photolithography, dry etching, wet etching, and other microfabrication techniques (i.e. [0037]).

As to the pending claims above, which contain intended use terms, the Examiner will interpret these claims in light of the structural elements that are disclosed and not for their intended use as stated after the terms, i.e. "for," "adapted to," and "configured to." The terms, "for," "adapted to," and "configured to" are intended use terms. A recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Furthermore, a structure, which is capable of providing the intended use, is considered to meet the limitation of intended use recited in a claim to a device or an apparatus. Therefore, the Examiner has applied the reference, Lazar, because Lazar's structural limitations are capable of meeting these recited functions.

As to claim 1, the claim language, "low" appears to be a functional term because it recites the function of the recited, "electrical source," which is to have a low function. While Lazar discloses an electrical source that is capable of producing a high voltage, Lazar discloses that her electrical source also produces and is capable of producing a low voltage in, i.e. paragraphs [0031]

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and [0035]. Therefore, it appears that Lazar reads on the recited, “low voltage electrical source,” limitation.

As to claim 33, the claim language recited in this claim appears to recite a product-by-process claim because it recites the method of construction.

Because the method of forming the claimed invention does not contribute to the patentability of a device or an apparatus claim, Lazar’s disclosure properly reads on this limitation.

### **Claim Rejections - 35 USC § 103**

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. **Claim 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lazar in view of Kaduce et al. (“Kaduce,” *A rapid, isocratic method for phospholipids separation by high-performance liquid chromatograph*, 1983).

Lazar discloses the following: see paragraph 7 above.

Lazar does not specifically disclose utilizing a fluid that is selected from a group consisting of acetonitrile, methanol, ethanol, tetrahydrofuran, isopropanol, and toluene.

Kaduce discloses a rapid, isocratic method for separating the most prevalent phospholipids by high-performance liquid chromatography. Kaduce further discloses utilizing acetonitrile and methanol to conduct the HPLC analysis (i.e. page 1398, second column). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Lazar by including acetonitrile and methanol in Lazar’s invention. Lazar specifically discloses

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utilizing a chromatography device. Kaduce teaches that it is known in the art to utilize liquids such as acetonitrile and methanol for these types of devices (page 1401, second column).

### Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 11/177,505. Although the conflicting claims are not identical, they are not patentably distinct from each other because both claims recite substantially the same subject matter, differing in the inclusion of multiple electrodes recited in the instant claims. Both claims recite a substrate, a chromatography column (separation column), and a pump system

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(electrochemical pump system). It would have been obvious to provide multiple electrodes within the device of claim 1 of application 11/177505 in order to ensure that the electroosmotic flow in the microchannels is moving in the desired direction (Lazar, [0028]). This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Response to Arguments***

11. Applicant's arguments filed 10/2/08 have been fully considered but they are not persuasive.

In response to applicant's argument that Lazar does not anticipate or teaches away from a low voltage source, examiner respectfully disagrees. As stated above, the claim language, "low" appears to be a functional term because it recites the function of the recited, "electrical source," which is to have a low function. While Lazar discloses an electrical source that is capable of producing a high voltage, Lazar discloses that her electrical source also produces and is capable of producing a low voltage in, i.e. paragraphs [0031] and [0035]. Therefore, it appears that Lazar reads on the recited, "low voltage electrical source," limitation.

Based on the statements asserted in applicant's reply on p. 6-7 (filed on 10/2/08), it appears that applicant is maintaining the same arguments, as asserted in applicant's prior reply (filed on 6/14/07). Therefore, examiner's responses to applicant's arguments are re-stated below.

In response to applicant's argument that Lazar's invention does not generate gaseous species in the pump chamber, a recitation of the intended use



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of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Here, applicant asserts the disadvantage of the electroosmotic pumping system as recited in applicant's specification (i.e. page 2) and disclosed in US Patent No. 6,572,749 ("Paul et al."). However, applicant's recitation indicating the disadvantage of the prior art reference is not sufficient to overcome a rejection under 102. The amended claim language in claim 1, "wherein the fluid is adapted to a generate a gaseous species . . ." is intended use language, which does not patentably distinguish Lazar from applicant's invention since Lazar's invention reads on the structural features recited in amended claim 1.

Furthermore, Paul et al. discloses utilizing a pump that uses an electro-osmotic flow to provide a high pressure hydraulic system. Thus, it appears that Paul et al. supports examiner's position that Lazar's invention reads on applicant's claimed invention.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Here, examiner has properly shown, above, that Lazar does read on applicant's claimed invention. Thus, Lazar in view of Kaduce does read on claim 24.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to LORE RAMILLANO whose telephone number is (571)272-7420. The examiner can normally be reached on Mon. to Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lore Ramillano/  
Examiner, Art Unit 1797

Lore Ramillano  
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Art Unit 1797